

REMARKS

This is a Response to the Office Action mailed April 4, 2006. The Applicant originally submitted claims 1 - 41 in this application. Claims 1 - 41 remain pending in this application. The Applicant respectfully requests reconsideration.

Rejection Of Claims 1, 2, 5, 6, and 37 Under 35 U.S.C. §103(a)

The Examiner rejected claims 1, 2, 5, 6, and 37 under 35 U.S.C. §103(a) as being unpatentable over Jinbo et al. (US Patent No. 6,438,081) in view of Robinson et al. (US Patent No. 6,624,668). The Applicant respectfully traverses this rejection.

In order for a rejection based on a combination of references to be proper under 35 U.S.C. §103(a), some suggestion or motivation to combine the references must exist and the combined teachings must teach each and every element of the claim. The Applicant respectfully submits that these requirements are not met. The Examiner has provided no evidence of any suggestion to combine the teachings of Jinbo et al. and Robinson et al. and the Applicant respectfully submits that there is no suggestion for combining the teachings of Jinbo et al. and Robinson et al. Jinbo et al. is directed to a storage system configured to extract a sync clock signal and data from a storage medium, whereas Robinson et al. is directed to a phase-locked loop circuit for use in high-speed receivers, transmitters and transceivers. A person working in the art of communications equipment such as receivers and transmitters would not look to the art of storage systems to obtain knowledge about receivers and transmitters. Likewise, a person inventing in the art of storage systems would not look to the art of receivers and transmitters to obtain knowledge about storage systems. This is evidenced by the fact that these references are cited in different classes. Jinbo et al. is classified in Class 369 whereas Robinson et al. is classified in Class 327. Neither reference is cross-referenced in the other Class. For at least the reasons stated above, the Applicant believes that the rejection is improper and requests that it be withdrawn.

Furthermore, the combined teachings of Jinbo et al. and Robinson et al. does not teach each and every element recited in Independent Claims 1 and 37. Independent claim

1 recites a multi-phase sampling system comprising a "plurality of samplers, ... each sampler sampling a portion of the input data signal corresponding to a transition of the input data and a portion of the input data signal corresponding to data..." Independent Claim 37 recites a method for use in a multi-phase sampling system in which each of a plurality of sampling devices samples a first data signal "at a portion of the first data signal corresponding to a transition of the first data signal and at a portion of the first data signal corresponding to data...."

Therefore, in accordance with the invention, *each* sampler samples both a transition and data of the incoming data signal. By using multiple samplers, where each sampler samples both a transition and data, the samples can be combined to obtain two adjacent data, or bit, samples and an intermediate transition sample. These two adjacent bit samples and the intermediate data sample are then logically combined in a known manner using an early-late ATB detector to obtain early-late error indications. (See Figure 1 and Page 8, Lines 5-19 of the application as filed).

Neither Jinbo et al. nor Robinson et al. teach or suggest a plurality of samplers wherein each sampler samples both a transition and data from an incoming data signal. The Examiner recognizes that Jinbo et al. does not teach or suggest this feature of the invention. Rather, the Examiner relies on Robinson et al. as teaching a plurality of latches each configured to sample the middle and the edge of a data period. The Applicant respectfully disagrees. It is not clear from the text or figures of Robinson et al. whether each latch samples both the middle and the edge of a data period. Robinson utilizes ten high-speed capture latches, which are used to convert serial input data into parallel data paths. Collectively, the latches sample the input data twice per data bit, with one sample being taken from the middle of the data period while the other sample is taken at the bit edge. (See Column 7, Lines 64-67 and Column 8, Lines 1-12). However, the latches are not shown in any of the figures and there is no statement that explicitly states that each latch samples at both the middle of the data period and at the edge of the data period. In fact, it appears that five of the latches sample in the middle of the data period and the other five sample at the edge of the data period because the ten latches produce at their outputs ten samples with five of the samples being the middle samples and five being the edge samples. Nevertheless, it cannot be said that Robinson et al. teaches, either explicitly or

implicitly, ten latches that each sample in the middle and at the end of the data period. For this additional reason, the Applicant respectfully submits that independent claims 1 and 37 are patentable over Jinbo et al. in view of Robinson et al. Because dependent claims 2, 5 and 6 depend from independent claim 1, and therefore incorporate the elements of claim 1, these claims are also believed to be patentable over Jinbo et al. in view of Robinson et al. Accordingly, the Applicant respectfully requests that the rejection of claims 1, 2, 5, 6 and 37 be withdrawn.

Rejection Of Claims 2, 4, 38, And 39 Under 35 U.S.C. §103(a)

The Examiner has rejected claims 3, 4, 38, and 39 under 35 U.S.C. §103(a) as being unpatentable over Jinbo et al. (US Patent No. 6,438,081) in view of Robinson et al. (US Patent No. 6,624,668) and further in view of LaRosa et al (US Patent No. 5,247,544). The Applicant respectfully traverses the rejection. Nevertheless, for at least the reason that claims 3, 4, 38, and 39 depend either directly or indirectly from either of independent claims 1 or 37, which are believed to be patentable for the reasons stated above, claims 3, 4, 38, and 39 are also believed to be patentable over Jinbo et al. in view of Robinson et al. and further in view of LaRosa et al. Therefore, the Examiner's findings with respect to claims 3, 4, 38, and 39 will not be further addressed.

Rejection Of Claims 10, 14, 28, 32, 40 and 41 under 35 U.S.C. §103(a)

The Examiner rejected claims 10, 14, 28, 32, 40, and 41 under 35 U.S.C. §103(a) as being unpatentable over Jinbo et al. (US Patent No. 6,438,081) in view of Robinson et al. (US Patent No. 6,624,668) and further in view of LaRosa et al (US Patent No. 5,247,544). The Applicant respectfully traverses this rejection.

As stated above with respect to the rejection of independent claims 1, 2, 5, 6 and 37, no suggestion or motivation exists to combine the teachings of Jinbo et al. and Robinson et al. Therefore, no suggestion or motivation exists to combine the teachings of Jinbo et al., Robinson et al. and LaRosa et al., and the Examiner has not provided any suggestion or motivation to combine the references. Accordingly, the Applicant respectfully submits that the rejection is improper and requests that it be withdrawn.

Furthermore, the combined teachings do not teach each and every element recited in the independent claims. Independent claims 10 and 28 both recite that each of the first, second, and third sampling devices samples "the first data signal at a portion of the first data signal corresponding to a transition of the first data signal and at a portion of the first data signal corresponding to data....". Claim 40 recites: "each of the sampling devices sampling the first data signal at a portion of the first data signal corresponding to a transition of the first data signal and at a portion of the first data signal corresponding to data....". Claims 14, 32 and 41 depend either directly or indirectly from claim 10, 28 or 40.

As stated above, neither Jinbo et al. nor Robinson et al. teach or suggest the above-quoted features of the invention. The Examiner makes no contention that LaRosa et al. teaches or suggests these features. The Applicant agrees that LaRosa et al. does not teach these features of the invention. For at least these additional reasons, the Applicant respectfully submits that claims 10, 14, 28, 32, 40 and 41 are patentable over Jinbo et al. in view of Robinson et al. in further view of LaRosa et al., and the Applicant respectfully requests that this rejection be withdrawn.

CONCLUSION

In view of the above comments, the Applicants respectfully submit that all grounds of rejection are overcome and that the application is in full condition for allowance. Accordingly, the Applicants earnestly solicit early and favorable action. Should there be any further questions or reservations, the Examiner is urged to telephone the Applicants' undersigned attorney at (770) 984-2300.

Respectfully submitted,

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